

# Package ‘GUIDE’

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**Type** Package

**Title** GUI for DERivatives in R

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**Description** A nice GUI for financial DERivatives in R.

**Depends** R (>= 3.0.0), rpanel, tkrplot

**License** GPL-2

**Encoding** UTF-8

**NeedsCompilation** no

**Repository** CRAN

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GUIDE-package	<i>The main menu for the GUIDE package.</i>
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---

**Description**

Function to bring up the main menu for the GUIDE package

**Usage**

GUIDE()

**Details**

Entering "GUIDE()" brings up a GUI containing the following menus:

- Forwards
- Futures
- Options
- Swaps
- Stochastic Processes
- Value at Risk
- Bonds and
- Utilities

**Value**

The main menu for the GUIDE package

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

---

ABMPaths

*Simulate and plot Arithmetic Brownian Motion path(s)*

---

## Description

Function to simulate and plot Arithmetic Brownian Motion path(s)

## Usage

```
ABMPaths()
```

## Details

The user inputs are as follows:

Drift (or mu)

Volatility(or sigma)

Paths

Clicking on the '+' and '-' respectively increases and decreases the values of each of the above three inputs.

## Value

A graph of Arithmetic Brownian Motion path(s) for user specified Drift rate (mu) and the Volatility (sigma).

## Author(s)

S Subramanian <ssubramanian@ssihl.edu.in>

## References

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

## See Also

[GBMPaths](#), [BrownianPaths](#)

---

`basicpayoffs`*Plot payoffs / profit and loss of European Call/Put.*

---

**Description**

Function to Plot payoffs / profit and loss of European Call/Put.

**Usage**

```
basicpayoffs()
```

**Details**

The user inputs are as follows:

Position: choose Long/Short/both

Option Type: chosen between Call/Put

Plot Type: chosen between Payoff/Profit-and-Loss

**Value**

Plot of payoffs / profit and loss of European Call/Put.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[trading.menu](#)

---

`bearsreadputs`*Profit & Loss plot of bear spread with puts.*

---

**Description**

Function to plot Profit & Loss of bear spread with puts.

**Usage**

```
bearsreadputs()
```

**Details**

Short put check box: checking it plots the Profit and loss of a short put position.

Long put check box: checking it plots the Profit and loss of a long put position.

Profit check box: checking it plots the over all Profit and loss of a bear spread with puts.

**Value**

Profit & Loss plot of bear spread with puts.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bullspreadcalls](#), [trading.menu](#)

---

blackscholes

*Calculate the Black scholes formula value of a European Call/Put.*

---

**Description**

Function to calculate the Black scholes formula value of a European Call/Put.

**Usage**

```
blackscholes()
```

**Details**

The user inputs are as follows:

Exercise style: chosen between European/American

Spot: to be entered in numbers for e.g. 120.50

Strike: to be entered in numbers for e.g. 110.50

Risk free rate per annum: to be entered in decimals. For e.g. 0.05 for 5 per cent

Maturity in number of years: to be entered in decimals. For e.g. 0.25 for a quarter year

Sigma (or Volatility) per annum: to be entered in decimals. For e.g. 0.25 for 25 per cent

Dividend yield: to be entered in decimals. For e.g. 0.02 for 2 per cent

Type of Option: chosen between Call/Put

**Value**

Calculate the Black scholes formula value of a European Call/Put.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[stockoptiontreegi](#)

---

bondchange

*Calculate the change in the price of a bond for change in yield based on the duration or duration and convexity approximation.*

---

**Description**

Function to calculate change in the price of a bond for change in yield based on the duration or duration and convexity approximation.

**Usage**

bondchange()

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 1200.50

Modified Duration: percent per annum

Convexity: percent per annum

Change in yield (in basis points): clicking on "+/-" increases/decreases the yield.

Formula/Approximation: chosen between Duration/Duration and Convexity

**Value**

The change in the price of a bond for change in yield based on the duration or duration and convexity approximation.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bondchange](#), [bonddur](#)

---

bondconv	<i>Calculate the convexity of a bond.</i>
----------	---

---

**Description**

Function to calculate the convexity of a bond.

**Usage**

```
bondconv()
```

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 1200.50

Coupon rate: percent per annum

Discount rate: percent per annum

Maturity: number of years

Note: Clicking on the '+' and '-' respectively increases and decreases the value.

Coupon Payments: chosen amongst Quarterly/Semi-annual/Annual

Frequency of rates: chosen amongst continuous/same as coupon/annual

**Value**

Duration of a bond.

**Author(s)**

S Subramanian <[ssubramanian@sssihl.edu.in](mailto:ssubramanian@sssihl.edu.in)>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bonddur](#), [bondprice](#)



---

bonddur

*Calculate the duration of a bond.*

---

### **Description**

Function to calculate the duration of a bond.

### **Usage**

bonddur()

### **Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 1200.50

Coupon rate: percent per annum

Discount rate: percent per annum

Maturity: number of years

Note: Clicking on the '+' and '-' respectively increases and decreases the value.

Coupon Payments: chosen amongst Quarterly/Semi-annual/Annual

Frequency of rates: chosen amongst continuous/same as coupon/annual

Duration formula: chosen between Macaulay and Modified

### **Value**

Duration of a bond.

### **Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

### **References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

### **See Also**

[bondchange](#), [bondprice](#)

bondforwardtreegui      *Plot a Bond Forward Tree*

---

**Description**

Function to plot a Bond Forward Tree

**Usage**

bondforwardtreegui ()

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 120.50

Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

Coupon: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Bond Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.

Forward Maturity: must be lesser than Bond Maturity. Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Bond Forward tree / Bond tree

**Value**

A plot of Bond Forward Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[bondtreegui](#), [bondfuturestreegui](#)

---

bondfuturestreogui      *Plot a Bond Futures Tree*

---

**Description**

Function to plot a Bond Futures Tree

**Usage**

bondfuturestreogui ()

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 120.50

Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

Coupon: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Bond Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.

Futures Maturity: must be lesser than Bond Maturity. Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Bond Futures tree / Bond tree

**Value**

A plot of Bond Futures Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[bondtreogui](#), [bondforwardtreogui](#)

bondoptiontreegui      *Plot a Bond Option Tree*

---

**Description**

Function to plot a Bond Option Tree

**Usage**

```
bondoptiontreegui()
```

**Details**

The user inputs are as follows:

Type of Option: chosen between Call/Put

Exercise style: chosen between European/American

Face Value: to be entered in numbers for e.g. 120.50

Strike price: to be entered in numbers for e.g. 110.50

Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

Coupon: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Bond Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.

Option Maturity: must be lesser than Bond Maturity. Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Bond Option tree / Bond tree

**Value**

A plot of Bond Option Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[bondtreegui](#)

---

bondprice	<i>Calculate the price of a bond.</i>
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---

**Description**

Function to calculate the price of a bond.

**Usage**

bondprice()

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 1200.50

Coupon rate: percent per annum

Discount rate: percent per annum

Maturity: number of years

Note: Clicking on the '+' and '-' respectively increases and decreases the value.

Coupon Payments: chosen amongst Quarterly/Semi-annual/Annual

**Value**

Price of a bond.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bondchange](#), [bonddur](#)

---

`bondtreegui`*Plot a Bond Tree*

---

**Description**

Function to plot a Bond Tree

**Usage**

```
bondtreegui()
```

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 120.50

Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

Coupon: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Bond Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Bond tree / Rate tree

**Value**

A plot of Bond Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[ratetreegui](#)

---

BrownianPaths	<i>Simulate and plot Brownian Motion path(s)</i>
---------------	--

---

**Description**

Function to simulate and plot Brownian Motion path(s)

**Usage**

BrownianPaths()

**Details**

The user inputs are as follows:

Paths

Clicking on the '+' and '-' respectively increases and decreases the values of each of the input.

**Value**

A graph of Brownian Motion path(s).

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[GBMPaths](#), [ABMPaths](#)

---

bullspreadcalls	<i>Profit &amp; Loss plot of bull spread with calls.</i>
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---

**Description**

Function to plot Profit & Loss of bull spread with calls.

**Usage**

bullspreadcalls()

**Details**

Long call check box: checking it plots the Profit and loss of a long call position.

Short call check box: checking it plots the Profit and loss of a short call position.

Profit check box: checking it plots the over all Profit and loss of a bull spread with calls.

**Value**

Profit & Loss plot of bull spread with calls.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bearsreadputs](#), [trading.menu](#)

---

butterfly

*Profit & Loss plot of butterfly.*

---

**Description**

Function to plot Profit & Loss of butterfly.

**Usage**

```
butterfly()
```

**Details**

Long call 1 check box: checking it plots the Profit and loss of a long call position.

Long call 2 check box: checking it plots the Profit and loss of a long call position.

Short two calls check box: checking it plots the Profit and loss of 2 short calls position.

Profit check box: checking it plots the over all Profit and loss of a butterfly.

**Value**

Profit & Loss plot of butterfly.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>



**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[reversebutterfly, trading.menu](#)

---

calcgreeks

*Calculate the greeks for a European Call/Put.*

---

**Description**

Function to calculate the greeks for a European Call/Put.

**Usage**

```
calcgreeks()
```

**Details**

The user inputs are as follows:

Spot: to be entered in numbers for e.g. 120.50

Strike: to be entered in numbers for e.g. 110.50

Maturity in number of years: to be entered in decimals. For e.g. 0.25 for a quarter year

Dividend yield: to be entered in decimals. For e.g. 0.02 for 2 per cent

Type of Option: chosen between Call/Put

Greek: chosen amongst Delta, Gamma, Vega, Theta, Rho

Sigma (Volatility) per annum

Risk free rate per annum:

Clicking "+ / -" increases/decreases the value of the above two inputs.

**Value**

The value of the chosen greek for a European Call/Put.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[blackscholes](#)

---

`captreogui`*Plot a Cap Tree*

---

**Description**

Function to plot a Cap Tree

**Usage**

```
captreogui()
```

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 120.50

Strike: to be entered in numbers for e.g. 110.50

Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Coupon: to be entered in percent. For e.g. enter 5.0 for 5 percent

Cap Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Cap tree / Rate tree

**Value**

A plot of Cap Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[ratetreogui](#), [floortreogui](#)

---

cashprice	<i>Calculate the Cash price of a T Bond Futures</i>
-----------	---

---

**Description**

Function to calculate the Cash price of a T Bond Futures

**Usage**

cashprice()

**Details**

The user inputs are as follows:

Quoted Price: e.g. 97.8

Conv. Factor: e.g. 1.06

Acc. Interest: in dollars e.g. 3.50

**Value**

The Cash price of a T Bond Futures.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[futurescurrency](#), [futurescommodity](#)

---

cdswap	<i>Calculate the spread in a credit default swap.</i>
--------	---

---

**Description**

Function to calculate the spread in a credit default swap.

**Usage**

cdswap()

**Details**

The user inputs are as follows:

Notional: to be entered in numbers for e.g. 1000000

Risk free rate: entered in decimals for e.g. 0.05 for 5 per cent

Maturity in yrs: entered for e.g. 5 for 5 years

Probability of Default: entered in decimals for e.g. 0.02 for 2 per cent

Default assumption: chosen amongst End of Q1/End of half year/End of Q3/End of Year

recovery rate: Clicking on "+/-" increases/decreases the recovery rate.

**Value**

The spread in a credit default swap.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[curswapvalue](#), [cdswap](#)

---

curswapvalue

*Calculate the value of a fixed-fixed currency swap.*

---

**Description**

Function to calculate the value of a fixed-fixed currency swap.

**Usage**

curswapvalue()

**Details**

The user inputs are as follows:

Notional(Home): to be entered in numbers for e.g. 1000000

Payment rate (Home): entered in decimals for e.g. 0.05 for 5 per cent

Interest rate (Home): entered in decimals for e.g. 0.05 for 5 per cent

Notional(Foreign): to be entered in numbers for e.g. 1200000

Payment rate (Foreign): entered in decimals for e.g. 0.05 for 5 per cent

Interest rate (Foreign): entered in decimals for e.g. 0.05 for 5 per cent

Months for first payment: enter 3 for 3 months

Spot exchange rate: units of home currency per unit of foreign currency. e.g. 1.5 dollars per pound is entered as 1.5

Frequency of spot rates: chosen amongst continuous/quarterly/semi-annual/annual

Number of periods: corresponds to settlement frequency. for e.g. if settlement frequency is chosen as semi-annual, a value of 3 (Number of periods) means three semi-annums. Settlement frequency: chosen amongst quarterly/semi-annual/annual

**Value**

The Value of a fixed-fixed currency swap.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[irswapvalue](#), [cdswap](#)

---

durcoupon

*Plot the relationship between duration and coupon rate of a bond.*

---

**Description**

Function to Plot the relationship between duration and coupon rate of a bond.

**Usage**

durcoupon()

**Details**

The user inputs are as follows:

Discount Rate ( Maturity (Yrs)

Clicking on "+/-" increases/decreases the values of the above two inputs

**Value**

A Plot of the relationship between duration and coupon rate of a bond.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bondchange](#), [bondprice](#)

---

durmaturity

*Plot the relationship between duration and maturity of a bond.*

---

**Description**

Function to Plot the relationship between duration and maturity of a bond.

**Usage**

```
durmaturity()
```

**Details**

The user inputs are as follows:

Coupon ( Discount rate (or yield) ( Clicking on "+/-" increases/decreases the values of the above two inputs.

**Value**

A Plot of the relationship between duration and maturity of a bond.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bondchange](#), [bondprice](#)

---

`duryield`*Plot the relationship between duration and yield of a bond.*

---

**Description**

Function to Plot the relationship between duration and yield of a bond.

**Usage**`duryield()`**Details**

The user inputs are as follows:

Coupon ( Maturity (Yrs)

Clicking on "+/-" increases/decreases the values of the above two inputs.

**Value**

A Plot of the relationship between duration and yield of a bond.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[bondchange](#), [bondprice](#)

---

`eurodollar`*Calculate the value of a eurodollar futures contract price from the CME IMM Quote.*

---

**Description**

Function to calculate value of a eurodollar futures contract price for notional of 1 mn from the CME IMM Quote.

**Usage**`eurodollar()`

**Details**

The user inputs are as follows:  
CME Quote: e.g. 97.8

**Value**

The value of a eurodollar futures contract price for notional of 1 mn from the CME IMM Quote.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[futurescurrency](#), [futurescommodity](#)

---

floortreegui

*Plot a Floor Tree*

---

**Description**

Function to plot a Floor Tree

**Usage**

```
floortreegui()
```

**Details**

The user inputs are as follows:  
Face Value: to be entered in numbers for e.g. 120.50  
Strike: to be entered in numbers for e.g. 110.50  
Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent  
u: up move factor- to be entered in decimals. For e.g. 1.25  
d: down move factor- to be entered in decimals. For e.g. 0.80  
q: probability of up move- to be entered in decimals. For e.g. 0.60  
Coupon: to be entered in percent. For e.g. enter 5.0 for 5 percent  
Floor Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.  
Plot type: chosen between Floor tree / Rate tree

**Value**

A plot of Floor Tree with user specified parameters.



**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[ratetreegui](#), [captreegui](#)

---

forwardcommodity	<i>Calculate the forward value of a commodity.</i>
------------------	--

---

**Description**

Function to calculate the forward value of a commodity.

**Usage**

```
forwardcommodity()
```

**Details**

The user inputs are as follows:

Spot: entered in decimals. For e.g. 105.50

Risk free Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Maturity: entered in number of years. For e.g. half year is 0.5

Convenience yield: entered in decimals. e.g. enter 0.02 for 2 per cent. Storage cost(s): entered with comma separation if it is in cash and occurring at multiple times e.g. 2.50, 3.0. If it is in yield terms, it is entered in decimals. e.g. enter 0.02 for 2 per cent

Storage time(s): entered with comma separation e.g. 0.25, 0.50 for 3 months and 6 months

Type of Income: chosen between yield/cash

**Value**

The forward value of a commodity.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[forwardcurrency](#), [forwardstock](#)

---

forwardcurrency	<i>Calculate the forward value of a currency.</i>
-----------------	---

---

**Description**

Function to calculate the forward value of a currency.

**Usage**

forwardcurrency()

**Details**

The user inputs are as follows:

Spot: entered in decimals. For e.g. 105.50

Risk free Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Maturity: entered in number of years. For e.g. half year is 0.5

Foreign Interest(s): entered with comma separation if it is in cash and occurring at multiple times e.g. 2.50, 3.0. If it is in yield terms, it is entered in decimals. e.g. 0.02 for 2 per cent

Interest time(s): entered with comma separation e.g. 0.25, 0.50 for 3 months and 6 months

Type of Income: chosen between yield/cash

**Value**

The forward value of a currency.

**Author(s)**

S Subramanian <[ssubramanian@ssihl.edu.in](mailto:ssubramanian@ssihl.edu.in)>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[forwardstock](#), [forwardcommodity](#)

---

forwardstock	<i>Calculate the forward value of a stock.</i>
--------------	--

---

**Description**

Function to calculate the forward value of a stock.

**Usage**

forwardstock()

**Details**

The user inputs are as follows:

Spot: entered in decimals. For e.g. 105.50

Risk free Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Maturity: entered in number of years. For e.g. half year is 0.5

Dividend(s): entered with comma separation if it is in cash and occurring at multiple times e.g. 2.50, 3.0. If it is in yield terms, it is entered in decimals. e.g. 0.02 for 2 per cent

Dividend time(s): entered with comma separation e.g. 0.25,0.50 for dividends in 3 months and 6 months

Type of Income: chosen between yield/cash

**Value**

The forward value of a stock.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[forwardcurrency](#), [forwardcommodity](#)

---

fra                      *Calculate the forward rate.*

---

**Description**

Function to Calculate the forward rate.

**Usage**

fra()

**Details**

The user inputs are as follows:

Months1: number of months for the loan period to begin- enter 3 for 3 months

Rate1: enter in decimals. For e.g. 5 Months2: number of months for the loan period to end- enter 6 for 6 months

Rate2: enter in decimals. For e.g. 8 Frequency of spot rates: chosen between Continuous and Loan period

**Value**

The forward rate of interest.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[forwardcurrency](#), [forwardcommodity](#)

---

fravalue                      *Calculate the value of a forward rate agreement.*

---

**Description**

Function to Calculate value of a forward rate agreement.

**Usage**

fravalue()

**Details**

The user inputs are as follows:

Notional: enter notional value of FRA. e.g. 1 mn is entered as 1000000

Fixed Rate: enter in decimals. For e.g. 5 Fwd Rate: enter in decimals. For e.g. 8 Months1: number of months for the loan period to begin- enter 3 for 3 months

Months2: number of months for the loan period to end- enter 6 for 6 months

**Value**

The value of a forward rate agreement.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[fra](#)

---

futurescommodity                      *Calculate the value of a commodity futures.*

---

**Description**

Function to calculate the value of a commodity futures.

**Usage**

futurescommodity()

**Details**

The user inputs are as follows:

Spot: entered in decimals. For e.g. 105.50

Risk free Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Maturity: entered in number of years. For e.g. half year is 0.5

Convenience yield: entered in decimals. e.g. 0.02 for 2 per cent. Storage cost(s): entered with comma separation if it is in cash and occurring at multiple times e.g. 2.50, 3.0. If it is in yield terms, it is entered in decimals. e.g. 0.02 for 2 per cent

Storage time(s): entered with comma separation e.g. 0.25, 0.50 for 3 months and 6 months

Type of Income: chosen between yield/cash

**Value**

The value of a commodity futures.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[futurescurrency](#), [futuresstock](#)

---

futurescurrency

*Calculate the value of a currency futures.*

---

**Description**

Function to calculate the value of a currency futures.

**Usage**

futurescurrency()

**Details**

The user inputs are as follows:

Spot: entered in decimals. For e.g. 105.50

Risk free Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Maturity: entered in number of years. For e.g. half year is 0.5

Foreign Interest(s): entered with comma separation if it is in cash and occurring at multiple times e.g. 2.50, 3.0. If it is in yield terms, it is entered in decimals. e.g. 0.02 for 2 per cent

Interest time(s):entered with comma separation e.g. 0.25,0.50 for 3 months and 6 months  
Type of Income: chosen between yield/cash

**Value**

The value of a currency futures.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[futuresstock](#), [futurescommodity](#)

---

futuresstock

*Calculate the value of a stock futures.*

---

**Description**

Function to calculate the value of a stock futures.

**Usage**

futuresstock()

**Details**

The user inputs are as follows:

Spot: entered in decimals. For e.g. 105.50

Risk free Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Maturity: entered in number of years. For e.g. half year is 0.5

Dividend(s): entered with comma separation if it is in cash and occurring at multiple times e.g. 2.50, 3.0. If it is in yield terms, it is entered in decimals. e.g. 0.02 for 2 per cent

Dividend time(s):entered with comma separation e.g. 0.25,0.50 for dividends in 3 months and 6 months

Type of Income: chosen between yield/cash

**Value**

The value of a stock futures.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[futurescurrency](#), [futurescommodity](#)

---

fv

*Calculate the future value of an amount.*

---

**Description**

Function to calculate the future value of an amount.

**Usage**

fv()

**Details**

The user inputs are as follows:

Present Value: entered in decimals. For e.g. 105.50

Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Time: entered in number of years. For e.g. half year is 0.5

Compounding frequency: chosen amongst continuous/Quarterly/Semi-annual/Annual

**Value**

The future value of an amount.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[fvann](#), [pv](#)



---

fvann                      *Calculate the future value of an annuity.*

---

**Description**

Function to calculate the future value of an annuity.

**Usage**

fvann()

**Details**

The user inputs are as follows:

Installment: entered in decimals. For e.g. 105.50

Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Time: entered in number of years. For e.g. half year is 0.5

Payment frequency: chosen amongst Monthly/Quarterly/Semi-annual/Annual

**Value**

The future value of an annuity.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[pvann](#), [fv](#)

---

GBMPaths                      *Simulate and plot Geometric Brownian Motion path(s)*

---

**Description**

Function to simulate and plot Geometric Brownian Motion path(s)

**Usage**

GBMPaths()

**Details**

The user inputs are as follows:

Drift (or mu)

Volatility(or sigma)

Paths

Clicking on the '+' and '-' respectively increases and decreases the values of each of the above three inputs.

**Value**

A plot of Geometric Brownian Motion path(s) showing the Drift rate (mu) and the Volatility (sigma).

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[ABMPaths](#), [BrownianPaths](#)

---

greekneutrality

*Calculate the hedge positions for achieving greek(s) neutrality for European Call/Put.*

---

**Description**

Function to calculate the hedge positions for achieving greek(s) neutrality for European Call/Put.

**Usage**

greekneutrality()

**Details**

The user inputs are as follows:

Positions: entered with comma separation in case of multiple options. Short positions are entered with a '-' sign prefixed. e.g. -1000, -500, -2000, -500

Deltas: entered with comma separation in case of multiple options. e.g. 0.5, 0.8, -0.4, 0.7

Gammas: entered with comma separation in case of multiple options. e.g. 2.2, 0.6, 1.3, 1.8

Vegas: entered with comma separation in case of multiple options. e.g. 1.8, 0.2, 0.7, 1.4

Type of Neutrality desired: chosen amongst Delta, Delta and Gamma, Delta and Vega, Delta Gamma and Vega

Delta, Gamma, Vega of traded option 1: entered with comma separation in case of multiple options.

e.g. 0.6, 1.5, 0.8

Delta, Gamma, Vega of traded option 2:entered with comma separation in case of multiple options.

e.g. 0.1, 0.5, 0.6

**Value**

Positions in the underlying or traded option(s) to achieve the desired greek neutrality

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[calcgreeks](#)

---

GUIDE

*The main menu for the GUIDE package.*

---

**Description**

Function to bring up the main menu for the GUIDE package

**Usage**

GUIDE()

**Details**

Entering "GUIDE()" brings up a GUI containing the following menus:

Forwards

Futures

Options

Swaps

Stochastic Processes

Value at Risk

Bonds and

Utilities

**Value**

The main menu for the GUIDE package

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

---

impvol

*Calculate the Black scholes implied volatility of a European Call/Put.*

---

**Description**

Function to calculate the Black scholes implied volatility of a European Call/Put.

**Usage**

impvol()

**Details**

The user inputs are as follows:

Exercise style: chosen between European/American

Spot: to be entered in numbers for e.g. 120.50

Strike: to be entered in numbers for e.g. 110.50

Risk free rate per annum: to be entered in decimals. For e.g. 0.05 for 5 per cent

Maturity in number of years: to be entered in decimals. For e.g. 0.25 for a quarter year

Dividend yield: to be entered in decimals. For e.g. 0.02 for 2 per cent

Mkt price: to be entered in numbers for e.g. 12.50

Type of Option: chosen between Call/Put

**Value**

The Black scholes implied volatility of a European Call/Put.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[blackscholes](#)

---

irswapvalue	<i>Calculate the value of an interest rate swap.</i>
-------------	--

---

**Description**

Function to calculate the value of an interest rate swap.

**Usage**

irswapvalue()

**Details**

The user inputs are as follows:

Notional: to be entered in decimals for e.g. 1000000

Fixed rate: entered in decimals for e.g. 0.05 for 5 per cent

Last spot rate: entered in decimals for e.g. 0.05 for 5 per cent

Months for first payment: enter 3 for 3 months

Spot rates: enter with comma separation. e.g. 0.054, 0.056, 0.058

Frequency of spot rates: chosen amongst continuous/quarterly/semi-annual/annual

Settlement frequency: chosen amongst quarterly/semi-annual/annual

**Value**

The Value of an interest rate swap.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[curswapvalue](#), [cdswap](#)

---

JDPaths

*Simulate and plot Jump Diffusion path(s)*

---

**Description**

Function to simulate and plot Jump Diffusion path(s)

**Usage**

JDPaths()

**Details**

The user inputs are as follows:

Drift (or mu)

Volatility(or sigma)

Mean of jumps

Std Dev of Jumps

Jump Intensity

Paths

Clicking on the '+' and '-' respectively increases and decreases the values of each of the above inputs.

**Value**

A graph of Jump Diffusion path(s) showing the parameter values.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[GBMPaths](#), [ABMPaths](#)

---

Premium3D

*Option premium as a function of stock price/strike and time.*

---

**Description**

Function to plot the option premium as a function of stock price/strike and time

**Usage**

Premium3D()

**Details**

The user inputs are as follows:

Type of Option: chosen between Call/Put

X-Y axis: chosen between Stock price-Time/Strike - Time

sigma

Risk free rate

Clicking on the '+'/'-' respectively increases/decreases the values.

**Value**

A plot of the option premium as a function of stock price/strike and time

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[basicpayoffs](#)

---

pricematurity

*Plot the relationship between price and maturity of a bond.*

---

**Description**

Function to Plot the relationship between price and maturity of a bond.

**Usage**

pricematurity()

**Details**

The user inputs are as follows:

Coupon rate (per cent p.a.)

Discount rate (or yield) p.a.

Moving the slider increases/decreases the values of the above two inputs.

Coupon frequency: chosen amongst quarterly, semi-annual and annual.

**Value**

A Plot of the relationship between price and maturity of a bond.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[priceyield](#), [bondprice](#)

---

priceyield

*Plot the relationship between price and yield of a bond.*

---

**Description**

Function to Plot the relationship between price and yield of a bond.

**Usage**

```
priceyield()
```

**Details**

The user inputs are as follows:

Coupon rate (per cent p.a.)

Maturity (yrs)

Moving the slider increases/decreases the values of the above two inputs.

Coupon frequency: chosen amongst quarterly, semi-annual and annual.

**Value**

A Plot of the relationship between price and yield of a bond.



**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[pricematurity](#), [bondprice](#)

---

pv

*Calculate the Present value of an amount.*

---

**Description**

Function to calculate the Present value of an amount.

**Usage**

pv()

**Details**

The user inputs are as follows:

Future Value: entered in decimals. For e.g. 105.50

Rate: entered in decimals. For e.g. 5\ per cent is entered as 0.05

Time: entered in number of years. For e.g. half year is 0.5

Compounding frequency: chosen amongst continuous/Quarterly/Semi-annual/Annual

**Value**

The Present value of an amount.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[pvann](#), [fv](#)

---

pval	<i>Calculate the cumulative probability corresponding to a given a z value from a normal distribution.</i>
------	--

---

**Description**

Function to calculate the cumulative probability corresponding to a given a z value from a normal distribution.

**Usage**

pval()

**Details**

The user input is as follows:

z value: A number that can be from - infinity to + infinity. E.g. -1.65

**Value**

The cumulative probability from the left tail of the distribution till the given z value.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[zval](#)

---

pvann	<i>Calculate the Present value of an annuity.</i>
-------	---

---

**Description**

Function to calculate the Present value of an annuity.

**Usage**

pvann()

**Details**

The user inputs are as follows:

Installment: entered in decimals. For e.g. 105.50

Rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

Time: entered in number of years. For e.g. half year is 0.5

Payment frequency: chosen amongst Monthly/Quarterly/Semi-annual/Annual

**Value**

The Present value of an annuity.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[pv](#), [fvann](#)

---

rate	<i>Calculate rate in the desired frequency.</i>
------	---

---

**Description**

Function to calculate rate in the desired frequency.

**Usage**

```
rate()
```

**Details**

The user inputs are as follows:

Given frequency: chosen amongst continuous/Quarterly/Semi-annual/Annual

Required frequency: chosen amongst continuous/Quarterly/Semi-annual/Annual

Given rate: entered in decimals. For e.g. 5 per cent is entered as 0.05

**Value**

Rate expressed the desired frequency.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[pv](#), [fv](#)

---

ratetreogui

*Plot a interest rate tree*

---

**Description**

Function to plot a interest rate tree

**Usage**

```
ratetreogui()
```

**Details**

The user inputs are as follows:

Rate: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Rate tree steps: Clicking on the '+' and '-' respectively increases and decreases the value.

**Value**

A plot of interest rate tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[bondtreogui](#)

---

reversebutterfly      *Profit & Loss plot of reverse butterfly.*

---

**Description**

Function to plot Profit & Loss of reverse butterfly.

**Usage**

reversebutterfly()

**Details**

Short call 1 check box: checking it plots the Profit and loss of a Short call position.

Short call 2 check box: checking it plots the Profit and loss of a Short call position.

Long two calls check box: checking it plots the Profit and loss of 2 long calls position.

Profit check box: checking it plots the over all Profit and loss of a reverse butterfly.

**Value**

Profit & Loss plot of reverse butterfly.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[butterfly](#), [trading.menu](#)

---

reversestraddle      *Profit & Loss plot of reverse straddle.*

---

**Description**

Function to plot Profit & Loss of reversestraddle.

**Usage**

reversestraddle()

**Details**

Long Put check box: checking it plots the Profit and loss of a long put position.

Long Call check box: checking it plots the Profit and loss of a long call position.

Profit check box: checking it plots the over all Profit and loss of a reverse straddle.

**Value**

Profit & Loss plot of reversestraddle.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[straddle](#), [trading.menu](#)

---

reversestrangle

*Profit & Loss plot of reverse strangle.*

---

**Description**

Function to plot Profit & Loss of reversestrangle.

**Usage**

```
reversestrangle()
```

**Details**

Long Put check box: checking it plots the Profit and loss of a long put position.

Long Call check box: checking it plots the Profit and loss of a long call position.

Profit check box: checking it plots the over all Profit and loss of a reverse strangle.

**Value**

Profit & Loss plot of reversestrangle.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[strangle](#), [trading.menu](#)

---

stockoptiontreegui      *Plot a stock option Tree*

---

**Description**

Function to plot a Binomial stock Tree

**Usage**

stockoptiontreegui()

**Details**

The user inputs are as follows:

Type of Option: chosen between Call/Put

Exercise style: chosen between European/American

Stock Price: to be entered in numbers for e.g. 120.50

Strike price: to be entered in numbers for e.g. 110.50

Time in number of years: to be entered in decimals. For e.g. 0.25 for a quarter year

Volatility(or sigma) per annum: to be entered in decimals. For e.g. 0.25 for 25 percent

Risk free rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Dividend yield: to be entered in decimals. For e.g. 0.02 for 2 percent

No of steps: Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Stock tree / option tree

**Value**

A plot of Stock Tree / Option Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[blackscholes](#)

---

stockTimeGreeks	<i>Plot of option greeks for a European Call/Put as a function of stock price and time.</i>
-----------------	---

---

**Description**

Function to plot of option greeks for a European Call/Put as a function of stock price and time.

**Usage**

```
stockTimeGreeks()
```

**Details**

The user inputs are as follows:

Type of Option: chosen between Call/Put

Greek: chosen amongst Delta, Gamma, Vega, Theta, Rho

Sigma (Volatility) per annum

Risk free rate per annum:

Clicking "+ / -" increases/decreases the value of the above two inputs.

**Value**

Plot of option greeks for a European Call/Put as a function of stock price and time.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[calcgreeks](#)



---

`straddle`*Profit & Loss plot of straddle.*

---

**Description**

Function to plot Profit & Loss of straddle.

**Usage**

```
straddle()
```

**Details**

Long Put check box: checking it plots the Profit and loss of a long put position.

Long Call check box: checking it plots the Profit and loss of a long call position.

Profit check box: checking it plots the over all Profit and loss of a straddle.

**Value**

Profit & Loss plot of straddle.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[reversestraddle](#), [trading.menu](#)

---

`strangle`*Profit & Loss plot of strangle.*

---

**Description**

Function to plot Profit & Loss of strangle.

**Usage**

```
strangle()
```

**Details**

Long Put check box: checking it plots the Profit and loss of a long put position.  
Long Call check box: checking it plots the Profit and loss of a long call position.  
Profit check box: checking it plots the over all Profit and loss of a strangle.

**Value**

Profit & Loss plot of strangle.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[reversestrangle](#), [trading.menu](#)

---

strap

*Profit & Loss plot of strap.*

---

**Description**

Function to plot Profit & Loss of strap.

**Usage**

```
strap()
```

**Details**

Two Long Calls check box: checking it plots the Profit and loss of a long put position.  
Long Put check box: checking it plots the Profit and loss of a long call position.  
Profit check box: checking it plots the over all Profit and loss of a strap.

**Value**

Profit & Loss plot of strap.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[strip, trading.menu](#)

---

strip

*Profit & Loss plot of strip.*

---

**Description**

Function to plot Profit & Loss of strip.

**Usage**

```
strip()
```

**Details**

Two Long Puts check box: checking it plots the Profit and loss of a long put position.

Long Call check box: checking it plots the Profit and loss of a long call position.

Profit check box: checking it plots the over all Profit and loss of a strip.

**Value**

Profit & Loss plot of strip.

**Author(s)**

S Subramanian <[ssubramanian@ssihl.edu.in](mailto:ssubramanian@ssihl.edu.in)>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[strap, trading.menu](#)

swaptiontreegui

*Plot a Swaption Tree*

---

**Description**

Function to plot a Swaption Tree

**Usage**

```
swaptiontreegui()
```

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 120.50

Strike price: to be entered in numbers for e.g. 110.50

Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Swap Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.

Option Maturity: must be lesser than Swap Maturity. Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Swaption tree / Swap tree

**Value**

A plot of Swaption Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[bondoptiontreegui](#), [swaptreegui](#)

---

`swaptreogui`*Plot a swap Tree*

---

**Description**

Function to plot a Swap Tree

**Usage**

```
swaptreogui()
```

**Details**

The user inputs are as follows:

Face Value: to be entered in numbers for e.g. 120.50

Rate per annum: to be entered in percent. For e.g. enter 5.0 for 5 percent

u: up move factor- to be entered in decimals. For e.g. 1.25

d: down move factor- to be entered in decimals. For e.g. 0.80

q: probability of up move- to be entered in decimals. For e.g. 0.60

Fixed Rate: to be entered in percent. For e.g. 4.5 for 4.5 percent

Swap Maturity: Clicking on the '+' and '-' respectively increases and decreases the value.

Plot type: chosen between Swap tree / Rate tree

**Value**

A plot of Swap Tree with user specified parameters.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

David G. Luenberger, "Investment Science", 2/E, Oxford University Press, 2013.

**See Also**

[ratetreogui](#), [swaptiontreogui](#)

---

trading.menu

*A menu for Option trading strategies.*

---

### **Description**

Function to bring up the menu for option trading strategies.

### **Usage**

```
trading.menu()
```

### **Details**

Brings up a menu of option trading strategies to choose from. Strategies include:

Bull spread

Bear spread

Butterfly

Reverse butterfly

Straddle

Reverse straddle

Strangle

Reverse Strangle

Strip

Strap

Making a choice plots the chosen trading strategy.

### **Value**

A menu of various Option trading strategies.

### **Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

### **References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

### **See Also**

[basicpayoffs](#)

---

`var1stock`*Calculate the value at risk of a single stock.*

---

**Description**

Function to calculate the value at risk of a single stock.

**Usage**`var1stock()`**Details**

The user inputs are as follows:

Value of the stock: to be entered in numbers for e.g. 110.50

mu: the expected return- to be entered in decimals. For e.g. 0.05 for 5 per cent

Sigma (or Volatility) per annum: to be entered in decimals. For e.g. 0.25 for 25 per cent

Confidence level: to be entered in decimals. For e.g. 0.95 for 95 per cent

Horizon (in months): For e.g. enter 12 for a year

Distribution: chosen between normal/lognormal

**Value**

The dollar value at risk of a single stock.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[var2stocks](#)

---

`var2stocks`*Calculate the value at risk of two stocks.*

---

**Description**

Function to calculate the value at risk of two stocks.

**Usage**

```
var2stocks()
```

**Details**

The user inputs are as follows:

Value of the first stock: to be entered in numbers for e.g. 110.50

Value of the second stock: to be entered in numbers for e.g. 170.50

mu1: the expected return- to be entered in decimals. For e.g. 0.05 for 5 per cent

mu2: the expected return- to be entered in decimals. For e.g. 0.06 for 6 per cent

Sigma1 (or Volatility) per annum: to be entered in decimals. For e.g. 0.25 for 25 per cent

Sigma2 (or Volatility) per annum: to be entered in decimals. For e.g. 0.3 for 30 per cent

Confidence level: to be entered in decimals. For e.g. 0.95 for 95 per cent

Correlation: a number between -1 and +1 to be entered in decimals. For e.g. 0.6

Horizon (in months): For e.g. enter 12 for a year

Distribution: chosen between normal/lognormal

**Value**

The dollar value at risk of two stocks.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[var1stock](#)



---

`varbehavior`*Plot the behavior of value at risk as a function of its determinants.*

---

**Description**

Function to plot the behavior of value at risk as a function of its determinants.

**Usage**

```
varbehavior()
```

**Details**

The user inputs are as follows:

weight1: The weight of stock 1

mu1: the expected return

Sigma1 (or Volatility) per annum:

mu2: the expected return

Sigma2 (or Volatility) per annum:

Clicking on "+/-" increases/decreases the values of each of the above parameters.

**Value**

A graph of the behavior of value at risk as a function of its determinants.

**Author(s)**

S Subramanian <ssubramanian@ssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[var1stock](#), [var2stocks](#)

---

zval

*Calculate the cumulative probability corresponding to a given a z value from a normal distribution.*

---

**Description**

Function to calculate the cumulative probability corresponding to a given a z value from a normal distribution.

**Usage**

zval()

**Details**

The user input is as follows:

z value: A number that can be from - infinity to + infinity. E.g. -1.65

**Value**

The cumulative probability from the left tail of the distribution till the given z value.

**Author(s)**

S Subramanian <ssubramanian@sssihl.edu.in>

**References**

John C. Hull, "Options, Futures, and Other Derivatives", 8/E, Prentice Hall, 2012.

**See Also**

[pval](#)

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